

What is claimed is:

1. 1. A radio transmission power control circuit comprising:
  - 2 a radio frequency (rf) downconverter that produces a downconverter output having a frequency equal to the frequency difference between a first downconverter input based on a transmitted signal of a radio transmitter and a second downconverter input based on a local oscillator signal;
  - 7 a receiver baseband circuit that processes the downconverter output to produce a power signal representative of the transmitted signal; and
  - 9 a feedback control circuit that produces a transmitter gain control signal to control transmitted signal power so as to minimize the difference between the power signal and a power reference signal.
1. 2. A circuit according to claim 1, wherein the radio transmitter is part of a half-duplex radio transceiver also having a receiver circuit such that the receiver baseband circuit is used by the receiver circuit when the radio transmitter is inactive, and wherein the local oscillator signal is used by the radio transmitter such that the transmitted signal has a frequency determined by the local oscillator signal.
1. 3. A circuit according to claim 1, further comprising:
  - 2 an analog-to-digital converter that converts the power signal to a representative digital power signal; and
  - 4 wherein the feedback control circuit produces the transmitter gain control signal so as to minimize the difference between the digital power signal and the power reference signal.

- 1    4. A circuit according to claim 1, wherein the first downconverter input is
- 2    developed by a directional coupler that senses the transmitted signal.
  
- 1    5. A circuit according to claim 1, wherein the radio transmitter is part of a
- 2    wireless local area network transceiver.
  
- 1    6. A circuit according to claim 1, wherein the radio transmitter is part of a time
- 2    division duplex system.
  
- 1    7. A method of controlling radio transmission power, the method comprising:  
2       producing with a radio frequency (rf) downconverter a downconverter output  
3           having a frequency equal to the frequency difference between a first  
4           downconverter input based on a transmitted signal of a radio  
5           transmitter and a second downconverter input based on a local  
6           oscillator signal;  
7       processing the downconverter output with a receiver baseband circuit to  
8           produce a power signal representative of the transmitted signal; and  
9       producing a transmitter gain control signal to control transmitted signal power  
10          so as to minimize the difference between the power signal and a power  
11          reference signal.
  
- 1    8. A method according to claim 7, wherein the radio transmitter is part of a half-  
2    duplex radio transceiver also having a receiver circuit such that the receiver  
3    baseband circuit is used by the receiver circuit when the radio transmitter is  
4    inactive, and wherein the local oscillator signal is used by the radio transmitter  
5    such that the transmitted signal has a frequency determined by the local oscillator  
6    signal.

- 1    9. A method according to claim 7, further comprising:
  - 2       converting the power signal to a representative digital power signal; and
  - 3       wherein the transmitter gain control signal is produced so as to minimize the
  - 4           difference between the digital power signal and the power reference
  - 5           signal.
  
- 1    10. A method according to claim 7, wherein the first downconverter input is  
2       developed by a directional coupler that senses the transmitted signal.
  
- 1    11. A method according to claim 7, wherein the radio transmitter is part of a  
2       wireless local area network transceiver.
  
- 1    12. A method according to claim 7, wherein the radio transmitter is part of a time  
2       division duplex system.